REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion is respectfully requested.

Claims 1-12 are currently pending in the application; and Claims 1-12 are amended by the present amendment. The claims have been amended to correct minor informalities and cosmetic matters of form. No new matter is presented.

In the outstanding Official Action, Figs. 1, 2, 4, and 7 were objected to as incomplete; Claim 8 was rejected under 35 U.S.C. §112, first paragraph, as not supported by an enabling disclosure; and Claims 1-12 were rejected under 35 U.S.C. §102(b) as anticipated by Makiguchi et al., "*A Human Factor's Analysis of Optical Distortion for Automotive Windshields" published by Society for Automotive Engineering*", hereinafter "Makiguchi".

The Official Action first objected to Fig. 7 as incomplete with apparent regard to the labeling of the axes therein noted on the bottom of page 3 of the outstanding Official Action. In response, Fig. 7 is amended to add labels for these axes. Accordingly, Applicant respectfully requests that the objection to Fig. 7 be withdrawn. With further regard to the objection to Figs. 1, 2, and 4, it is believed that the accompanying replacement sheets with all boxes in these figures being labeled render this objection moot. Accordingly, withdrawal of this objection is also believed to be in order.

Claim 8 was rejected under 35 U.S.C. §112, first paragraph, as being based on a disclosure which is not enabling. Specifically, the Official Action states that "since no equations appear in the specification regarding gradient/dynamic distortion, there appears to be a gap of missing step with using the gradient to find the dynamic distortion perspective."[1] However, Claim 8 recites the dynamic perspective distortion of the transparent body is evaluated based on the rate of change of the ratios of the distance values to the reference

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[1] Official Action at page 3.

IN THE DRAWINGS

The attached sheets of drawings include changes to Figs. 1, 2, 4, and 7. These sheets, which include Figs. 1A-1C, 2, 4, 6 and 7, replace the original sheets including Figs. 1, 2, 4, 6 and 7.

Attachment: Replacement Sheets

value. The specification clearly states that the rate of change of the grid distance ratios (the ratios of the distance values to the reference value) in both the vertical and lateral directions are calculated by applying a least square means method or another suitable method to the grid distance ratios.[2] Accordingly, the step recited in Claim 8 is clearly enabled by the present specification, as those skilled in the art would be able to practice the invention without undue experimentation or delay. See MPEP §2164.01. Accordingly, Applicants respectfully request that the rejection of Claim 8 under 35 U.S.C. §112, first paragraph, be withdrawn.

The outstanding Official Action asserts that <u>Makiguchi</u> teaches all the elements of Claims 1-12. Applicant respectfully traverses this rejection.

The present claims are directed to a method for evaluating the dynamic perspective distortion of a transparent body and a method for correcting a three-dimensionally curved shape of a transparent body. A model of a transparent body having a predetermined refractive index is created and an eye-point (EP) is determined on one side of the model. A virtual evaluation pattern having a plurality of evaluation points on the side of the model opposite of the EP are generated and the virtual evaluation pattern is observed through the transparent body from the EP. Perspective evaluation points are then extracted as images of the evaluation points obtained by observing through the transparent body in a two-dimensional picture image. Then, distance values between adjacent perspective evaluation points are obtained and a reference value is selected from among the distance values. The dynamic perspective distortion of the transparent body is then evaluated by obtaining ratios of distance values to the reference values.

Figure 7 depicts an exemplary view of a plurality of ratios of distance values to the reference values, also referred to in the specification as grid distance ratios. From the graph depicted on Figure 7, a maximum gradient of grid distance ratio as well as a maximum value

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[2] Specification at page 16, line 24 through page 17, line 21.

of grid distance ratio can be determined. By analyzing these parameters, an abrupt change in

distortion values can be detected, such an abrupt change tends to result in a visual flicker of

an image moving dynamically past the three-dimensional transparent body.

Amended Claim 1 recites, *inter alia*, a method for evaluating the dynamic perspective

distortion of a transparent body, comprising:

> "...obtaining distance values of adjacent perspective evaluation
> points;
> determining a reference value, among the distance values, and
> evaluating the dynamic perspective distortion of the transparent
> body by obtaining ratios of the distance values to the reference value."

Claim 7 recites substantially similar features, but is directed to a method for

correcting a three-dimensional transparent body using similar steps to those recited in Claim

1.

Turning to the applied reference, Makiguchi describes a method of analyzing human

factors of optical distortion for automotive windshields. Specifically, Makiguchi describes

performing a series of tests involving human drivers and analyzing the effects of optical

distortion in various zones of a windshield on the driver's perception.[3] Makiguchi also

describes using a grid board to depict the areas of the windshield with the greatest distortion

angle and correlating these areas to a driver's sensitivity.[4] However, Makiguchi fails to teach

or suggest obtaining distance values of adjacent perspective evaluation points and using this

information to determine the dynamic perspective distortion of a three-dimensional

transparent object, as described in the presently claimed methods.

Amended Claim 1 recites obtaining distance values of adjacent perspective evaluation

points observed through the transparent body. An example of such a feature is depicted in

Figure 6, which shows the difference between vertical perspective evaluation points as

denoted by "d1" through "dn". Makiguchi describes that evaluation areas are determined by

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[3] Makiguchi at page 48, left column, paragraphs 4 and 5.
[4] Makiguchi at Figure 4 at pages 50-52.

viewing a grid through a windshield, and these evaluation areas are used to determine

distortion angle measurements for each area of the windshield.[5] However, <u>Makiguchi</u> fails to

teach or suggest that distance values are calculated between perspective evaluation points on

the grid. Instead, <u>Makiguchi</u> describes that a distortion angle is calculated using the vertical

and horizontal lines of the grid as perceived through the windshield. Therefore, <u>Makiguchi</u>

fails to teach or suggest obtaining distance values of adjacent perspective evaluation points of

a virtual evaluation pattern viewed through a transparent body, as recited in amended Claim

1.

Amended Claim 1 further recites that a reference value is determined among these

distance values and that the dynamic perspective distortion of the transparent body is

evaluated by obtaining ratios of the distance values to the reference values. <u>Makiguchi</u> fails

to teach or suggest any step or procedure that could be considered analogous to this claimed

limitation. The Official Action broadly cites page 53 and Table 3, of <u>Makiguchi</u>, as teaching

this recited claim limitation. However, Table 3 in <u>Makiguchi</u> describes the temporal and

spatial frequencies and visual sensitivities of object images as viewed through the various

zones of the windshield. Therefore, not only are no distance values determined, but nowhere

does <u>Makiguchi</u> teach or suggest determining a reference value among the distance values in

evaluating the dynamic perspective distortion of the transparent body by obtaining ratios of

the distance values to the reference values, as recited in amended Claim 1.

Amended Claim 2 recites that the dynamic perspective distortion of the transparent

body is evaluated based on the rate of change of the ratios of the distance values to the

reference values. Further, amended Claim 3 recites that the minimum value among the

distance values is selected as the reference value, and the dynamic perspective distortion of

the transparent body is evaluated based on the maximum value among the ratios of the

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[5] <u>Makiguchi</u> at pages 50-51.

distance values with respect to the minimum value. Claims 8 and 9 recite substantially analogous features to Claims 2 and 3 respectively.

The Official Action recites that the calculations performed to determine the dynamic perspective distortion, a recited in Claims 2 and 3, are inherent because each "calculation is obtainable given the data mentioned".[6]

"In relying upon the theory of inherency, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherently characteristic <u>necessarily</u> flows from the teachings of the applied prior art." *See* <u>Ex parte Levy</u>, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) and M.P.E.P. §2112.

As stated above, <u>Makiguchi</u> fails to teach or suggest the determination of distance values, much less obtaining the ratios of distance values to reference values which are used to perform the calculations recited in amended Claims 2 and 3. Therefore, in contrast to the assertion in the Official Action, the calculations recited in Claims 2 and 3 are not obtainable given the data generated by <u>Makiguchi's</u> method. Accordingly, Applicant respectfully submits that the Official Action has failed to meet the burden of providing this basis in fact and/or technical reasoning to support the assertion that the calculations performed to determine the dynamic perspective distortion as claimed in Claims 2 and 3 are inherent in <u>Makiguchi</u>'s disclosure.

Further, amended Claim 7 recites, *inter alia*, a method for designing three-dimensional transparent body, comprising:

> "...a step of correcting the three-dimensionally curved shape of
> the transparent body according to the evaluation."

The Official Action fails to address this feature of amended Claim 7. Further, <u>Makiguchi</u> teaches only a method for analyzing the optical distortion and its effects on drivers, and therefore fails to teach or suggest a step of correcting the three-dimensionally

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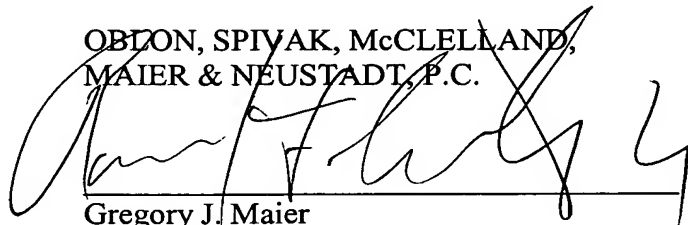[6] Official Action of November 29, 2004, at page 5.

curved shape of the transparent body according to the evaluation, as recited in amended

Claim 7.

Accordingly, for at least the reasons discussed above, Applicant respectfully requests

that the rejection of Claims 1, 2, 3, 7, 8 and 9 under 35 U.S.C. §102(b) be withdrawn. As

Claims 4-6 and 10-12 depend from amended Claims 1 and 7 respectively, it is also submitted

that these claims patentably define over Makiguchi for at least the same reasons their

respective parent claims do.

Consequently, in view of the present amendment and in light of the foregoing

comments, it is respectfully submitted that the invention defined by Claims 1-12 is definite

and patentably distinguishing over the applied references. The present application is

therefore believed to be in condition for formal allowance and an early and favorable

reconsideration of the application is therefore requested.

Respectfully submitted,

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